

In the Claims:

Please cancel claims 1-12, 21, 23, 28, and 34-37 and amend claims 14, 15, 22, 24, 25, 29, 31 and 33 as follows. A complete copy of the claims including marked-up versions of each claim which is amended in this Amendment, appears below.

1 Claims 1-12 (Cancelled).

1 13. (Previously Presented) A method of manufacturing an insulated wall panel,
2 comprising the steps of:

3 creating a rigid foam block having first and second opposing sides;

4 cutting the foam block to form a plurality of stacked individual foam sheets

5 having first and second sides and a plurality of parallel recesses in the first side;

6 inserting a reinforcing strip having a top and a bottom into each of the plurality of
7 recesses in each of the plurality of sheets;

8 covering the tops of each of the reinforcing strips with a first thin reinforcing
9 layer;

10 bonding the first reinforcing layer to the first side of each of the foam sheets; and

11 bonding a second reinforcing layer to the second side of each of the foam sheets;

12 wherein the step of cutting the foam block includes the steps of:

13 drawing a hotwire frame of substantially equally spaced parallel hot wires
14 through the block from the first side to the second opposing side of the block;

simultaneously forming each of the plurality of grooves in the block with each of the hot wires in the of the hotwire frame; and
completing a path through the block by substantially simultaneously separating the block into the plurality of sheets.

14. (Currently Amended) ~~The method of Claim 11,~~ A method of manufacturing an insulated wall panel, comprising the steps of:
creating a rigid foam block having first, and second opposing sides;
cutting the foam block to form a plurality of stacked individual foam sheets having first and second sides and a plurality of parallel recesses in only the first side;
inserting a reinforcing strip having a top and a bottom into each of the plurality of recesses in each of the plurality of sheets, wherein the reinforcing strip has a surface finish including at least a mechanically textured top surface and a plurality of spaced apart holes; or a plurality of spaced apart slots configured to engage mechanical fasteners;
covering the tops of each of the reinforcing strips with a first thin reinforcing layer; and
bonding the first reinforcing layer to the first side of each of the foam sheets;

wherein the step of bonding the first reinforcing layer includes at least one of the following steps:

- 17 (a) applying adhesive to the first side of each of the plurality of sheets
18 and subsequently rolling the first reinforcing layer onto the first side;
- 19 (b) applying adhesive to the first reinforcing layer and subsequently
20 rolling the first reinforcing layer onto the first sides of each of the foam sheets; and
- 21 (c) rolling the first reinforcing layer onto the first sides of the foam
22 sheets and subsequently heating the first reinforcing layer to form a thermal bond
23 between the first sides of the foam sheets and the first layer.

1 15. (Currently Amended) ~~The method of Claim 11,~~ A method of
2 manufacturing an insulated wall panel, comprising the steps of:

3 creating a rigid foam block having first, and second opposing sides;
4 cutting the foam block to form a plurality of stacked individual foam sheets
5 having first and second sides and a plurality of parallel recesses in only the first side;
6 inserting a reinforcing strip having a top and a bottom into each of the
7 plurality of recesses in each of the plurality of sheets, wherein the reinforcing strip has a
8 surface finish including at least a mechanically textured top surface and a plurality of
9 spaced apart holes; or a plurality of spaced apart slots configured to engage mechanical
10 fasteners;

11 covering the tops of each of the reinforcing strips with a first thin
12 reinforcing layer;

bonding the first reinforcing layer to the first side of each of the foam
sheets; and
further comprising the steps of:
orienting the foam ~~sheet~~sheets with respect to a means for trimming each
sheet such that there is a predetermined distance between the means for trimming and the
reinforcing strips, and trimming an edge of the foam ~~sheet~~sheets.

16. (Original) A method of manufacturing an insulated foam panel, comprising
the steps of:
forming a liquid matrix of expandable foam precursor;
channeling the liquid matrix out through a nozzle;
capturing the liquid matrix between two parallel and advancing thin sheets
of reinforcing material;
inserting a plurality of continuous webs of reinforcing strip between the
two sheets of reinforcing material;
maintaining the sheets in a substantially parallel, spaced-apart orientation as
they advance over a distance sufficient to permit the liquid matrix to expand, fill
substantially an entire void between the two sheets and harden in the form of a
continuously moving ribbon of insulated paneling; and

13 repeatedly and successively cutting the moving ribbon into a plurality of
14 individual insulating panels having a cut edge substantially perpendicular to the direction
15 of advancement.

1 17. (Original) The method of Claim 16, further comprising the steps of:
2 unrolling a plurality of ribbons of reinforcing material at substantially the
3 same linear rate as the first and second sheets advance; and
4 roll-forming the plurality of unrolled ribbons into the plurality of
5 continuous webs of reinforcing strip.

1 18. (Original) The method of Claim 17, further comprising the step of:
2 continuously trimming lateral opposed edges of the ribbon of insulated
3 paneling as the ribbon advances and prior to step of repeatedly and successively cutting.

1 19. (Original) The method of Claim 17, wherein the step of inserting includes
2 the steps of:
3 spacing the plurality of continuous webs of reinforcing strips a
4 predetermined first distance apart.

1 20. (Original) The method of Claim 17, wherein the steps of maintaining the
2 sheets includes the step of:

simultaneously maintaining the plurality of continuous webs of reinforcing strips at the predetermined first distance apart.

Claim 21 (Cancelled).

22. (Currently Amended) ~~The insulated wall panel of Claim 21,~~ An insulated wall panel, comprising:

a rigid foam sheet with first and second planar sides and having first and second grooves extending substantially the full length of the sheet in a substantially parallel orientation within only the first side of the sheet;

a first reinforcing strip having a length, a top and a bottom with the bottom being disposed in the first groove and the top facing outwardly away from the first groove, wherein the first strip extends substantially the full length of the sheet;

a second reinforcing strip having a length, a top and a bottom with the bottom being disposed in the second groove and the top facing outwardly away from the second groove, wherein the second strip extends substantially the full length of the sheet;

a first thin reinforcing layer bonded to the first planar side of the sheet, and extending across the top of the first and second grooves and substantially covering the entire first planar side of the sheet; and

a second thin reinforcing layer bonded to the second planar side of the sheet and extending across substantially an entire surface of second planar side, wherein the

17 bottoms of the first and second strips each have two downwardly extending flanges that
18 are oriented substantially perpendicular to the first planar side, and further wherein the
19 top of the first and second reinforcing strips are mechanically textured over the length of
20 the first and second strips to provide an improved gripping surface for drills and self
21 tapping screws, wherein the first and second reinforcing strips include a central recessed
22 portion configured to receive and support the head of a fastener, and further comprising a
23 plurality of fasteners coupled to the central recessed portion of both the first and second
24 reinforcing strips.

1 Claim 23 (Cancelled).

1 24. (Currently Amended) ~~The insulated wall panel of Claim 23,~~ An insulated
2 wall panel, comprising:
3 a rigid foam sheet with first and second planar sides and having first and
4 second grooves extending substantially the full length of the sheet in a substantially
5 parallel orientation in only the first side of the sheet and first and second opposing edges
6 generally parallel to the first and second grooves;
7 a first reinforcing strip having a length, a top and a bottom with the bottom
8 being disposed in the first groove and the top facing outwardly away from the first
9 groove, wherein the first strip extends substantially the full length of the sheet and
10 disposed in said sheet inwardly away from the first and second edges of the sheet;

11 a second reinforcing strip having a length, a top and a bottom with the
12 bottom being disposed in the second groove and the top facing outwardly away from the
13 second groove, wherein the second strip extends substantially the full length of the sheet
14 and is disposed in said sheet inwardly away from the first and second edges of the sheet;
15 a first thin reinforcing layer bonded to the first planar side of the sheet, and
16 extending across the top of the first and second grooves and substantially covering the
17 entire first planar side of the sheet; and
18 a second thin reinforcing layer bonded to the second planar side of the sheet
19 and extending across substantially an entire surface of second planar side,
20 wherein the first and second reinforcing strips include a central recessed
21 portion configured to receive and support the head of a fastener and two non recessed
22 portions that flank the recessed portion and extending substantially the entire length of
23 the respective first and second reinforcing strips, further comprising a plurality of headed
24 fasteners each having a head that is supported in the recessed portion and a shank that
25 extends through the recessed portion.

1 25. (Currently Amended) The insulated wall panel of Claim 322, wherein an
2 outwardly facing surface of the first and second reinforcing strips is configured to guide
3 the insertion of a fastener therethrough.

1 26. (Previously Presented) The insulated wall panel of Claim 25, wherein the
2 outwardly facing surface is configured with a surface texture that guides the insertion of a
3 fastener therethrough.

1 27. (Previously Presented) The insulated wall panel of Claim 25, wherein the
2 outwardly facing surface is configured with apertures that guide the insertion of a
3 fastener therethrough.

1 Claim 28 (Cancelled).

1 29. (Currently Amended) The insulated wall panel of Claim 322, wherein
2 lateral sides of the first and second reinforcing strips are spaced at least 6 inches away
3 from the lateral edges of the rigid foam sheet.

1 30. (Previously Presented) The insulated wall panel of Claim 29, wherein the
2 first and second reinforcing strips are generally spaced 12 inches apart.

1 31. (Currently Amended) The insulated wall panel of Claim 322, wherein
2 lateral sides of the first and second reinforcing strips are spaced at least 8 inches away
3 from the lateral edges of the rigid foam sheet.

1 32. (Previously Presented) The insulated wall panel of Claim 31, wherein the
2 first and second reinforcing strips are generally spaced 16 inches apart.

1 33. (Currently Amended) The insulated wall panel of Claim 322, wherein the
2 first and second reinforcing layers primarily consist of paper, foil or plastic film.

1 Claims 34-37 (Cancelled).